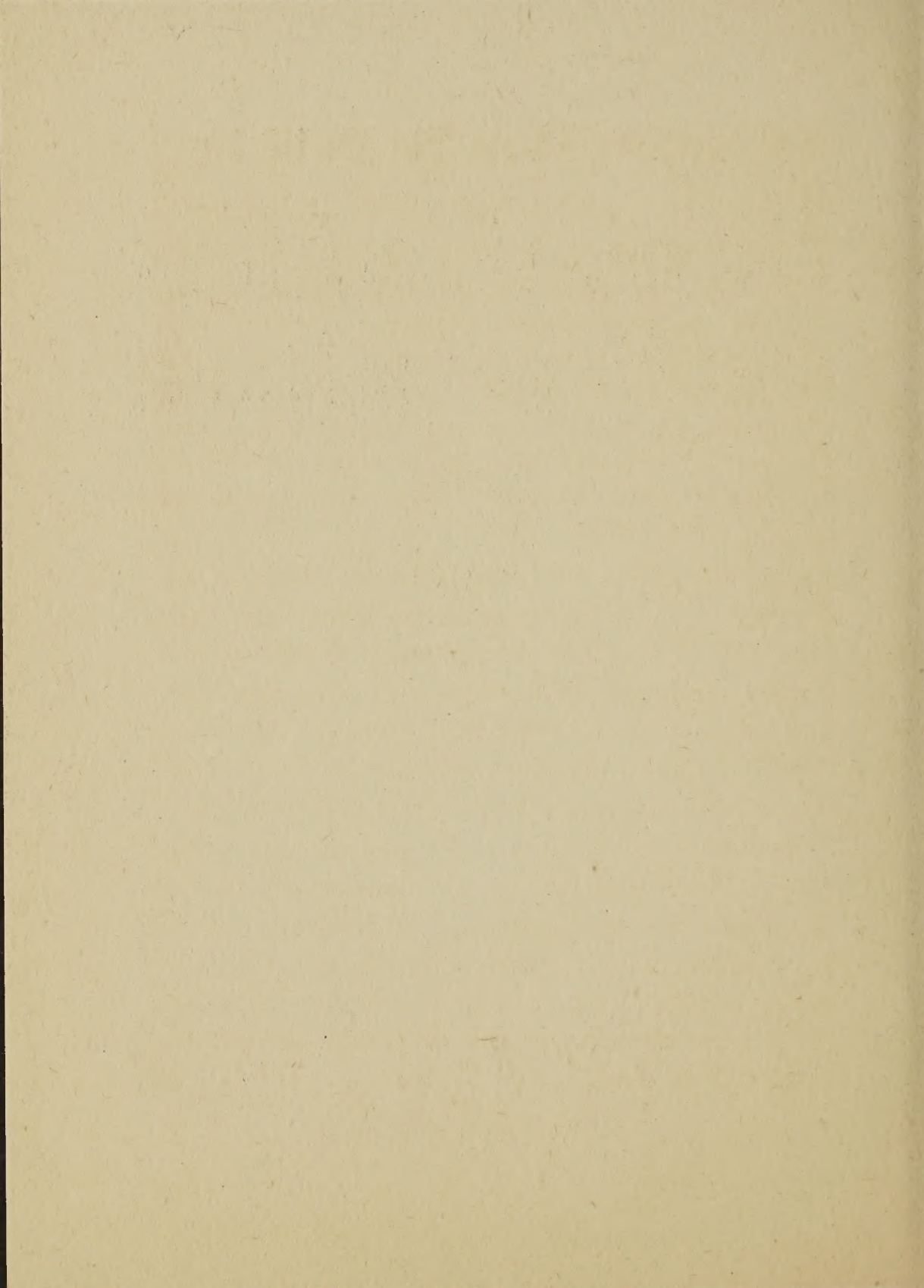


# House Comfort that Pays for Itself



WOOD CONVERSION CO.  
103 Park Ave., New York, N. Y.



# Comfort Must Be Built In

**T**WO days ought to be set aside each year for the planning of houses.

*One*—the coldest day in winter, when you can see your breath in the north bedroom at any hour, when sweaters and wraps are essential to even partial comfort and the coal pile is the only thing that melts.

*The other*—the hottest day in summer, when the upstairs rooms resemble bake ovens, when sleep is impossible and the coolest part of the house is anything but comfortable.

## Primary Purpose of a Home

Plan your house on these two days and you'll not lose sight of the primary purpose of a home—complete protection from the elements, and genuine comfort the year round. The house where inside comfort is dependent on outside temperatures can never be a satisfactory home.

For years we have been paying too much attention to generating heat and too little to keeping it where it belongs. If a house can't be kept warm we say the boiler is too small or there is too little radiation. If fuel bills are twice what they should be we blame the quality and price of coal.



## Comfort Must Be Built In

**T**HIS photograph of a Balsam-Wool insulated house was taken on a sub-zero night. While the camera man made his exposure the Balsam-Wool representative went inside to talk to the owner. He remarked on the contrast between the weather outside and the comfort within and was told by the owners that—"We never have the slightest difficulty keeping the

entire house at just the temperature we want it." He asked about fuel and learned that the owner had checked his fuel consumption with a neighbor in a house of the same age and somewhat smaller in size. The figures revealed a 23% saving on fuel for the house insulated with Balsam-Wool. "We credit this difference entirely to the use of Balsam-Wool" said the owner.

And all the time the heat continues to seep out through the walls and roof just a little faster than the overworked furnace can generate it.

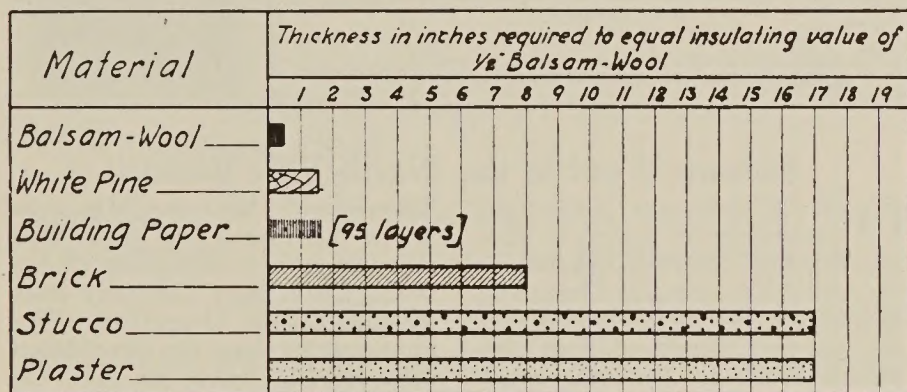
### Enormous Heat Waste

Heating experts say that at least one-third of the heat generated in the average house is so wasted.

If heat waves were visible like flame the problem would have had attention long ago.

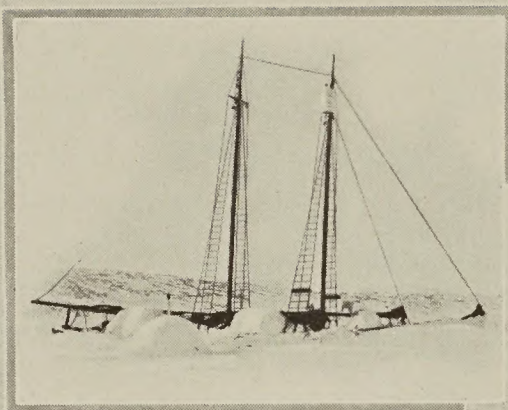
Only in the past few years have scientists found the answer by applying to buildings the principle of heat insulation around which household refrigerators and thermos bottles are built.

It simply consists of placing in the walls and roof of a house a material which is a natural barrier to the passage of heat. It is called heat insulation.



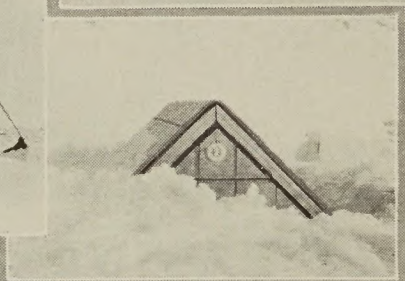
This chart indicates the heat insulating efficiency of Balsam-

Wool in comparison with some of the standard building materials.



Schooner "Bowdoin" in the Ice Field

The MacMillan Observatory  
in the Arctic



THE AMERICAN RADIO RELAY LEAGUE  
HARTFORD CONN.  
**RADIOGRAM**

FROM: WVF Schooner Bowdoin  
LOCATED AT: Jan 8/24  
DATE: Jan 8/24 TIME: 1:33 AM  
CHECK: 10  
OPERATION: 10

TO: Wood Conversion Company  
Cloquet, Minn.

FROM: Schooner Bowdoin, Refuge Harbor, Greenland DATE: January 8/24 VIA: app

--- Very happy to report that Balsam Wool is proving entirely satisfactory  
as a non-conductor in our Magnetic Observatory consider it indispensable  
for the nature of our work at temperatures ranging from 30 to 60 below zero

---MacMillan.

Sent:        TO: WVF LOCATED AT:        DATE:        TIME:        CHECK:        OPERATION:       

NOTICE TO ADDRESSEE: The Station debiting you this message will be pleased to forward your reply without charge.



## Balsam Wool in the North Pole Region

ONE of the most interesting comments of approval Balsam-Wool has received is that from the Arctic Explorer, Dr. Donald B. MacMillan, which is reproduced on this page. Dr. MacMillan used Balsam-Wool to line the small magnetic observatory used in his study of terrestrial magnetism and also in several places in the

"Bowdoin." After several months in the Far North Dr. MacMillan sent the above radiogram to the Wood Conversion Company from Refuge Harbor, Greenland. The photographs show Dr. MacMillan in North Pole garb, his ship, the "Bowdoin" frozen in at winter quarters and the Balsam-Wool lined observatory all but buried in snow.

# Why Every House Should Be Insulated

## **The Need for Insulation**

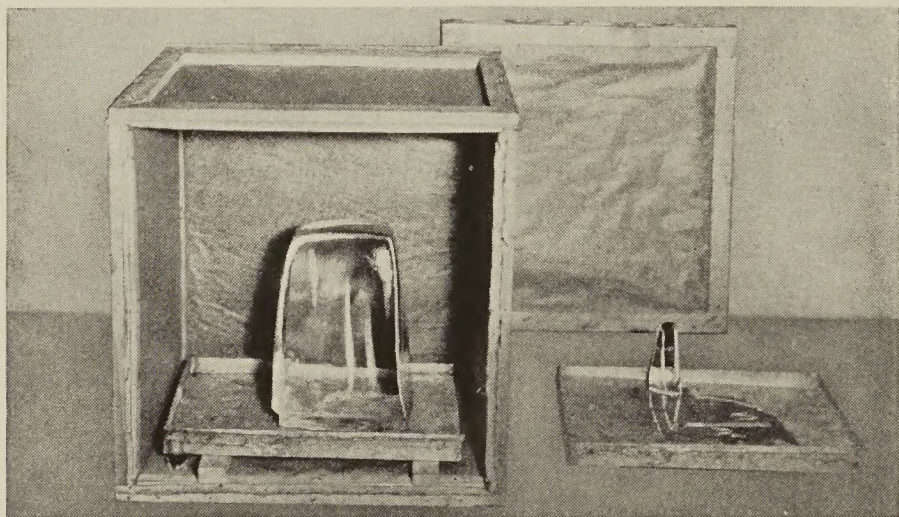
It is not intended to imply here that everyday life in the uninsulated house is one continual round of misery. In fact the weakness of the ordinary house is most apparent in the little things. You see it in the way the family keeps close to the radiators or the registers on a cold winter evening. The need for a blanket around the house is apparent in the frequent need for "wraps" and sweaters within.

On the other hand the old-fashioned uninsulated house has other more serious faults. The woman who has to make three or four round trips to the coal bin on a cold day can name one. And the man who settles with the coal dealer can name another.

## **Uniform Temperatures**

In winter the insulated house holds in the heat and keeps out the cold. In summer it keeps the heat out. In terms of household comfort insulation means comfortable, uniform temperatures throughout the house every day in the year.

You'll find the same cozy warmth in every room that you formerly found only in spots. The chair near the window becomes as popular as that near the radiator. The children play on the floor without danger of catching cold. You invite your friends in for the evening with the assurance that they will be genuinely comfortable in spite of the raging blizzard outside.



### A Photographic Description of the Insulation Principle

**T**HIS simple little test was made to demonstrate the heat stopping properties of Balsam-Wool. The box at the left is made of one layer of standard  $\frac{1}{2}$ -inch Balsam-Wool nailed to a wood frame. A 52-lb. cake of ice was placed in this box and another cake of the same size and weight was placed on the

floor beside the box. The temperature in the room was kept at 85 degrees Fahrenheit. After 36 hours the box was opened and the picture shown here was taken. The cakes were then weighed. The one in the insulated box weighed 27 pounds, the one outside  $\frac{1}{2}$  pound. No further explanation is necessary.

People who live in insulated houses say they never knew such complete comfort was possible. Four or five degrees, when measured by the thermometer on the back porch, are insignificant. When measured by the mercury on the living room wall they represent the difference between discomfort and comfort.

**Protection Against  
High Winds**

Undoubtedly you have noticed that high winds can produce discomfort inside a house even when the mercury outside does not register very low. Insulation proves a barrier to wind by sealing up all the cracks and crevices. Some insulations are more efficient than others on this score because of their extreme flexibility and especial attention to wind-proofing qualities.

**Summer  
Comfort**

The joys of the insulated house linger long after the snow has gone. The blazing heat of the summer sun is stopped at the roof line. Many a woman in an insulated house has found that by cooling off the house during the night or the early morning hours and closing it up as the mercury rises she

can keep the entire house at a comfortable temperature throughout the day.

The bedrooms upstairs and even in the attic stay cool. Some say that getting a refreshing night's sleep on even the hottest night is the greatest boon of insulation.

**Fuel Savings**      Thousands of insulated houses throughout the country are burning from one-quarter to one-third less fuel than neighboring houses of the same size uninsulated. Important because heating cost is the biggest single item of expense in the operation of most homes.

The owner of the well insulated house gets a  $33\frac{1}{3}\%$  discount on his fuel bills for life. If this booklet happened to arrive in the same mail with one of your fuel bills you know what such a saving would mean in your case.

**Less Heating Equipment**      The insulated house requires less heating equipment. Heating engineers recommend a reduction of as much as 20% in boiler capacity and radiation. Thus a portion of the insulation cost is offset when the house is built. The balance is paid back in installments with the coal bills.

**The Health  
Side**

The insulated house is a more healthful place in which to live. Uniform temperatures are healthful temperatures. The house with a "jumpy" thermometer is apt to see the family doctor pretty regularly, and while the doctor's prescription may cure a cold how much better not to have had the cold.

By assuring cool sleep-inviting bedrooms in hot weather insulation is further conducive to good health. You awake in the morning after a night of sound sleep fit and fresh for the day's work.

**Less Furnace  
Tending**

There is another advantage of the insulated house that will appeal particularly to the woman whose job it is to "mind the fire" during the day. The fire in the insulated house requires attention only at night and morning except in the severest weather.

**No Furnace Forcing—  
Less Fire Hazard**

Because so little heat escapes from the insulated house a slow, moderate fire is all you need to keep the temperature where you want it. By eliminating furnace forcing you reduce fire hazard. You only have to glance at

the newspaper headlines on a bitter cold day to realize the menace of overheated stoves and furnaces.

**Greater  
Re-Sale Value**

In view of the many benefits of insulation it is superfluous to say that the insulated house is easier to sell, should the occasion arise. The advantages are too obvious, the cost too reasonable and the saving too attractive for any home buyer to ignore. More than that, insulation is a guarantee that your house will never go on the "black list" as being hard to heat and extravagant of fuel.

Those who build houses for sale have been quick to see the sales value of insulation, especially in those sections where insulation is better known. Many such builders have adopted insulation as standard equipment and are finding that their homes sell more readily than before.

As the benefits of insulation become more generally known and as more and more home-seekers ask, "Is it insulated," it becomes increasingly difficult to dispose of the uninsulated house and correspondingly easy to sell the home where comfort and fuel economy are assured.



### Which Would You Pick?

**T**HESE houses were built from the same plans by the same contractor yet there is a vast difference between them. The one at the top owned by Mr. J. G. Carr, Aurora, Illinois, is insulated with Balsam-Wool, the other is not insulated. According to Mr. Carr's report of his first winter's fuel saving he will save annually

about \$30.00 on his coal bills as compared to his neighbor's. Mr. Carr also saved \$29.00 on his heating equipment as a result of having insulated his house. With a \$59.00 saving at the end of the first winter you can readily see that the Balsam-Wool in Mr. Carr's house will pay for itself in a very few years.

### Insulation in Temperate Climates

It would be a mistake to assume that the advantages of insulation are restricted to the more severe climates.

As you travel farther South you find more dread of summer's heat than winter's cold. In these sections the chief purpose of insulation is to keep the heat out.

Furthermore the average house in the mild-winter section is not built for warmth. Nor is much attention paid to heating equipment. When a cold, raw day comes along there may be difficulty in keeping comfortably warm. In the insulated house a little heat goes a long way.



### Insulation in the Warmer Climates

A HOME in Pasadena, California, insulated with Balsam-Wool. Insulation is rapidly gaining favor in the more mild climates, not

only for its hot weather comfort advantages but also for its ability to make a little heat go a long way when a raw day comes along.

# Balsam Wool—the Ideal Insulation

Examine the sample of Balsam-Wool which you received with this booklet. It doesn't require a knowledge of insulation theories to see how this "wooly" blanket makes a house proof against heat, cold, wind, dust and dampness.

## Balsam-Wool Resembles Sheeps Wool

The resemblance between Balsam-Wool and sheeps wool doesn't end with appearance. Actual tests on the two materials reveal the fact that one is practically as efficient an insulator as the other.

## The Efficiency of Balsam-Wool

The scientists' explanation of the high insulating efficiency of Balsam-Wool can be reduced to very simple terms. They begin with the statement that, next to a vacuum, "dead" air is the best insulator known. And they add that air is "dead" only when confined to cells so small that it cannot circulate.

They point to wood as a natural insulator, because of its fibre structure, each fibre containing tiny cells which constitute "dead air" spaces. The insulating value of wood is well known.



## Balsam-Wool—Efficient and Practical

AT the top is shown a piece of Balsam-Wool with the paper covering on one side only. Note the resemblance to sheeps wool. And actual tests on the two materials

show an equally striking similarity in insulating efficiency. The other two photographs show an open roll of Balsam-Wool and a sealed roll ready for delivery on the job.

Before you touch the metal handle of a hot kitchen utensil you look for some means of protecting your hand but you do not hesitate to grasp the wooden handle of your teakettle.

**A Wood  
Product**

Balsam-Wool is made from wood. By breaking the wood down into individual fibres and rebuilding these fibres into a "wool" form the number of air cells is increased and the natural insulating efficiency of wood is thus multiplied many times over. In the finished product, Balsam-Wool, these fine wood fibres and dead air cells present an effective barrier through which heat and cold cannot readily pass.

**What Laboratory  
Tests Show**

In numerous laboratory tests Balsam-Wool has shown consistently the highest insulating efficiency of any of the insulating materials that are offered in competition with it.

**The Equivalent of  
Sheeps Wool at  
One-fifth the Cost**

In the most recent test on Balsam-Wool made at Armour Institute, Chicago, by Professor J. C. Peebles, Balsam-Wool was given a rating of 5.5. This is the number of British Thermal Units which would pass through a one-inch

blanket of Balsam-Wool during a 24-hour period with the temperature on one side of the blanket 1° F. higher than on the other side. This rating is practically the same as that of sheeps wool; thus in Balsam-Wool you have practically the same insulating value as you find in sheeps wool at about one-fifth the cost.



### Balsam-Wool Saves Fire Loss

THE fire-resistive quality of Balsam-Wool was well demonstrated during the construction of the Royal Palm Terrace, Los Angeles, California, shown above. Mr. Charles Sheblak the owner writes, "during the process of roofing an asphalt kettle burst into flame which spread to a second kettle. The flame shot into the air 15 feet. The heat was so intense that we could not get near enough to throw sand on the fire and the

garden hose on the job was of little use.

"The studding of the lower floor caught on fire and the flames licked the Balsam-Wool. After ten minutes the fire department arrived and put the fire out. The Balsam-Wool blistered and charred but did not burn. My contractor and all of us agreed that if Balsam-Wool had not been used there would have been little chance to save the building."

## Other Qualities of Balsam-Wool

It is not enough that an insulating material show a high record of efficiency as a heat insulator. It must possess practical qualities to protect that high efficiency and keep it constant.

When you sit at home on a sub-zero night enjoying the cozy warmth of your Balsam-Wool insulated house the chances are you will not be thinking about these practical qualities. Yet that comfort which you prize so highly is dependent to a considerable extent upon them.

|                                      |   |
|--------------------------------------|---|
| <b>Balsam-Wool<br/>Is Waterproof</b> | Examine the sample of Balsam-Wool at one of the corners and note the film of asphalt which covers every inch of the paper on the inside. This waterproof coating is there to keep the wool dry at all times. Moisture destroys insulating value. This asphalt coating also serves to keep dampness out of the house. Balsam-Wool insulated houses are warm, dry, and healthful even in the damp days of spring. |
|--------------------------------------|---|

|                                     |  |
|-------------------------------------|--|
| <b>Balsam-Wool<br/>Is Permanent</b> | Once in place in the walls and roof of your house, Balsam-Wool is there to stay. It cannot decay. It cannot sift or settle down because each fibre |
|-------------------------------------|--|



Year round comfort and lower heat  
of these houses when they were built  
Wool in the walls and roofs. The inside  
many of these houses



g costs were made a permanent part  
by applying a blanket of Balsam-  
lation has already paid for itself in  
in lower fuel bills

is coated with an adhesive which cements it to adjacent fibres. The asphalt coating provides a permanent bond between wool and paper.

**Balsam-Wool  
Is Fire-resistant**

The chances are the Balsam-Wool in your house will never be called upon to stand a fire test. It is a comfortable feeling, nevertheless, to know that Balsam-Wool is chemically treated to make it fire resistant and that you are not adding any fire hazard to your house when you insulate it.

**Rat, Mouse and  
Vermin-proof.  
Sanitary**

Experience has shown that Balsam-Wool does not attract rats or mice. Balsam-Wool is clean, sanitary and odorless. Assurance of this is found in its rapidly increasing use as insulation in the better grades of household refrigerators. No woman need worry about its cleanliness and sanitary qualities.

**Flexible—Easy  
to Apply**

Balsam-Wool is light and flexible. It is easy to apply and can be fitted quickly into corners and around projections. The temptation to slight the hard places doesn't enter into a Balsam-Wool job. It comes in standard widths

so that the carpenter cuts only for length. The left-over scraps make ideal calking material for sealing up the cracks around window and door frames.

**The Cost of  
Insulating with  
Balsam-Wool**

Balsam-Wool insulation is within the reach of every builder.

The material itself is reasonable in price and because of the ease with which it is applied the installation cost is low. It should be remembered, too, that whatever you spend for insulation will be returned to you in lower fuel bills.

**T**HIS photograph illustrates vividly the heat loss through the roof of the uninsulated house and suggests the need for insulation. It was too cold outdoors when this photograph was taken for the snow to melt off the roof of the garage which is not heated. The heat loss from the house, however, is sufficient to melt all of the snow off the roof with the exception of a strip over the eaves where the heat coming through the roof cannot reach it.



JAMES A. MOYNES & CO.  
 CONTRACTORS - LUMBER - MILL WORK  
 PAINTING - DECORATING  
 873 251 251 MILLS AVE  
 DETROIT MICHIGAN



January 6, 1925.

Wood Conversion Company,  
 Cloquet,  
 Minnesota.

Gentlemen:

I have used many deadening products during my experience in the contracting business.

Some time ago I had occasion to use Balsam-Wool for this purpose in the Buckingham Apartments and I wish to say that it is the most effective deadening that I have ever used. Of course, it needs to be installed with care to get the best results from it. In this particular job we had what is known as a drop separate ceiling, joist construction, with the Balsam-Wool woven in between.

Yours very truly,

JAMES A. MOYNES & CO.

Per *James A. Moynes*



## Buckingham Apartments

Detroit, Michigan

H. Jerome Darling  
 Architect

James A. Moynes & Co.  
 Contractors

Wall and floors sound-  
 deadened throughout  
 with Balsam-Wool.

# Balsam-Wool Will Make Your House More Quiet

**Balsam-Wool is a  
Sound-deadener**

When you heat-insulate the outside walls of your house with Balsam-Wool you automatically make it more quiet and livable. For Balsam-Wool is an efficient sound deadener.

Applied in the inside walls and in the floors Balsam-Wool makes the whole house more quiet and each room more private.

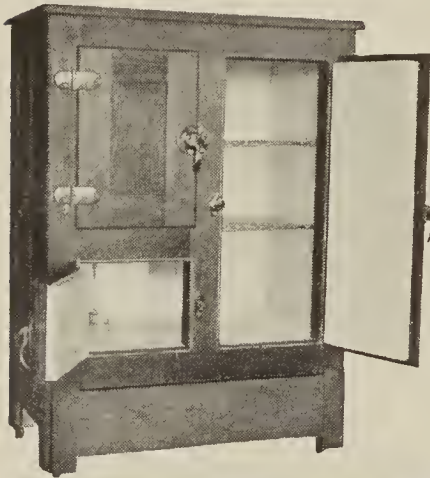
**Sound-deadening  
the Bathroom**

You will at least want to sound-deaden the walls of your bath-room. This is a simple job and inexpensive. It is a good plan, as a part of this job, to wrap the soil pipe with Balsam-Wool and thus deaden much of the noise which would otherwise be conveyed to other parts of the house.

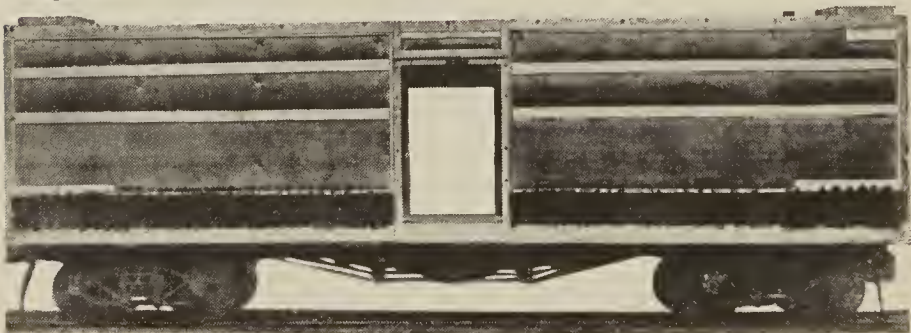
**Where  
Sound-deadening  
Is Essential**

If sound-deadening is desirable in houses, certainly it is essential in apartment buildings, hotels, hospitals, schools, clubs, libraries, gymnasiums and recreation centers.

A separate booklet on sound-deadening will be sent free on request.



NOWHERE is efficient insulation more necessary than in household refrigerators and railroad refrigerator cars. The fact that Balsam-Wool is being used today by a considerable number of leading refrigerator manufacturers and car builders is just another indication of its high insulating efficiency. A number of Balsam-Wool insulated ice boxes are illustrated on this page. The photograph at the bottom shows a refrigerator car after the Balsam-Wool has been installed.



# What Users of Balsam-Wool Say About It

The letters and comments that are coming in from owners of Balsam-Wool insulated buildings are adding another important chapter to the story of insulation. The records of Balsam-Wool results in actual buildings are adding further proof of its high insulating efficiency already established in the laboratory. To the "can do" of the scientist has been added the "has done" of the users.

## **Balsam-Wool at the North Pole**

On page 4 there is reproduced a radiogram from Dr. Donald B. MacMillan sent from Refuge Harbor, North Greenland, and reporting satisfactory service from Balsam-Wool at temperatures ranging from 30° to 60° below zero.

Letters from nearer home are reproduced in this book. Home owners tell of fuel savings and increased comfort—realtors report greater salability—contractors commend its ease of application and others tell of its sound deadening qualities, its fire resistance and its advantages as roof insulation for houses already built.



**T**HIS photograph shows Balsam-Wool being applied in the walls of a house. The 17-in. width fits snugly between the studding. The material flanges automatically as it is applied and these flanges are held tight against the studding and plates by means of lath or nailing strips. Every crack and crevice is thus tightly sealed.

**N**O matter how hot the sun, this room will always be comfortable. In this story-and-a-half house Balsam-Wool is applied not only between the studs but also between the rafters and under the ceiling joists. As a rule it is impossible to live comfortably in such rooms in an uninsulated house in the summertime. Balsam-Wool makes them as cool as the rooms below.



# Where and How Balsam-Wool Should be Applied

## Where Balsam-Wool Should be Applied

Balsam-Wool should be applied in all four walls and the roof or top floor ceiling.

In addition there are several other places where insulation is necessary.

In houses with only a partial basement the floors over the unexcavated portions should be insulated to keep out the cold and dampness. The sun porch floor should be insulated for the same reason. Where a part of the second story extends out over a porch Balsam-Wool should be applied in the floor of the room so extended.

## Balsam-Wool a Standard Building Material

Any carpenter can easily heat-insulate a house with Balsam-Wool. Neither special workmen, tools or methods are required.

For heat insulating or sound deadening houses Balsam-Wool comes in one standard form,  $\frac{1}{2}$  inch thick. It comes in three standard widths which meet all building construction requirements. The carpenter buys the width he wants and then cuts from the roll for length only.



**PAUL FROETSCHER**  
**CARPENTER AND GENERAL CONTRACTOR**

127 S 18TH AVENUE

MAYWOOD, ILL.  
 November 10, 1924.

Wood Conversion Company,  
 Cloquet, Minnesota

Gentlemen:

Balsam-Wool was first introduced to me last fall. I was impressed with your product, but having used insulation of another make, I did not change to yours immediately.

After thorough practical tests, and being a witness of a laboratory test made on your product and another by the Armour Institute of Technology, I was convinced that Balsam-Wool was the equal, if not the superior, of any other products of this nature. Since that time I have used a large quantity of your product and want to say that it meets all of my requirements, which are efficiency as an insulator, ease of application and a fair price.

All of my buildings are erected for resale, and want to say that insulation has helped, in a big way, in the sale of my buildings. I will not erect any buildings without insulation.

I am willing to recommend Balsam-Wool to anyone, and have at several times recommended it to prospects that your man in this territory has brought to me.

Yours truly,

*Paul Froetscher.*



# How to Specify and Obtain Balsam-Wool

## **Your Architect Will Specify**

Simply tell your architect that you wish to have the walls and roof of your new home insulated with Balsam-Wool. He will take care of the details.

## **Complete Specifications**

If you are dealing direct with the contractor see that Balsam-Wool and the method of application are written into the specifications.

## **See Your Lumber Dealer**

Balsam-Wool is sold today by lumber dealers in all sections of the country. If your dealer does not happen to have a stock on hand he can get it quickly.

## **A Weyerhaeuser Product**

Balsam-Wool carries the name of an organization that for more than sixty-five years has been known for the high standard of quality maintained in all its products.

On every roll of Balsam-Wool you will find the Weyerhaeuser Forest Products trade-mark, the maker's pledge of personal responsibility.

**F. S. GOERGENS**  
REAL ESTATE INVESTMENTS  
AND BUILDERS

Phone 2-2221, 100  
1400 North Dearborn Street  
Forest Park, Ill.  
December 20, 1924

Good Conversation Company  
1049 - Krebs Building  
Chicago, Illinois

Gentlemen:

We think you will be interested to know of our successful use of Balsam Wool in an old house.

We are agents for a nine-room residence at 564 Elgin Avenue, Forest Park, Illinois, which the tenants had never been able to keep comfortably heated. The furnace and install either hot water or steam at a cost of over one thousand dollars. One of your experts inspected this house and told us that if we could install Balsam Wool in the second story ceiling, and change the cold-air duct, the house would heat all right.

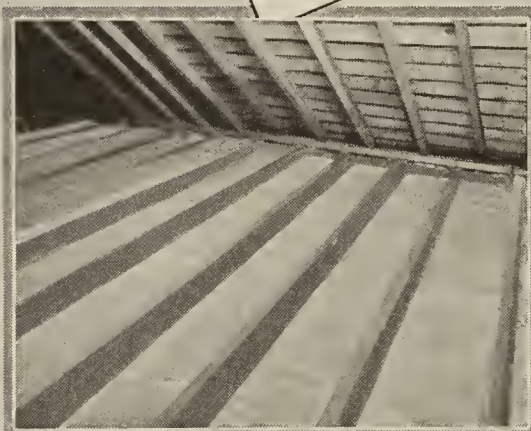
We used four rolls of Balsam Wool, which cost \$20.00. This was carefully laid on top of the lath and plaster, between the second story ceiling joists, and carried out to the outside sheathing. It was not found necessary to close the cold-air duct. One was spent only three hours doing the work. The Balsam Wool left over was used to insulate the cold-air returns. The cost was as follows:

|                           |                |
|---------------------------|----------------|
| 1,000 sq.-ft. Balsam Wool | \$20.00        |
| 3 hrs. labor              | 4.00           |
| Changing cold-air pipe    | 10.00          |
| <b>Total</b>              | <b>\$34.00</b> |

This house now heats perfectly with about half the fuel formerly used, and we feel that your material has either saved the owner \$1,000 or added that amount to the value of the property.

We are so well pleased with this job that photographs were taken, and enclose a view of the house and of the Balsam Wool in the attic.

Yours very truly,  
*F. S. Goergens*



Many a house that can't be kept "comfortably heated" needs only a few rolls of Balsam-Wool in the ceiling or roof to keep heat from leaking through to the outdoors.

# What Balsam-Wool Can Do for the House Already Built

## 60 Percent Goes Through the Roof

Once a house is built there is no way to stop the heat leakage through the walls.

But the large heat leakage through the roof can be stopped. 60% of the heat loss in the average house is through the roof. This waste of heat and fuel can be prevented easily and at low cost by applying a blanket of Balsam-Wool insulation either over the attic floor joists or between the roof rafters.

## Heat Resistance of Various Roofings

Exhaustive tests on actual roof sections show that the wood shingle roof is by far

the best natural insulator.

NOTE:—The figures below indicate the amount of heat (expressed in British Thermal Units) which passed through roof sections of various materials during the one hour test period. The figures in the first column show the heat loss through uninsulated roofs of different materials. The second column shows the amount of heat loss through the same roofs when insulated with Balsam-Wool.

|                           | UNINSULATED | INSULATED WITH<br>BALSAM-WOOL |
|---------------------------|-------------|-------------------------------|
| Wood Shingle Roof.....    | .304        | .190                          |
| Asphalt Shingle Roof..... | .526        | .258                          |
| Slate Shingle Roof.....   | .422        | .230                          |
| Zinc Shingle Roof.....    | .482        | .248                          |
| Copper Shingle Roof.....  | .564        | .267                          |
| Tile Shingle Roof.....    | .515        | .256                          |

One thing of special interest to all home-builders brought out by these tests is that while heat insulation is essential even with a wood shingle roof it becomes doubly necessary when materials which are ready conductors of heat, such as asphalt and the metals are used for roof covering.

**Advantages of  
Roof Insulation**

The advantages of roof or ceiling insulation in the house already built are the advantages of the completely insulated house only in a lesser degree—warmth and fuel savings in winter and cool comfort in summer.



**Assuring Summer Comfort in the Bungalow**

**I**NSULATION is especially necessary in the bungalow type of house because of its large roof area. The uninsulated bungalow is ex-

travagant of fuel and apt to be unbearably hot in summer. The photograph above shows a Balsam-Wool insulated bungalow in Flint, Mich.

**How to Add a  
Comfortable  
Extra Room**

Many people who have attic space say they wouldn't finish off the attic rooms because they wouldn't be livable. No one will deny that the average room under the uninsulated roof—cold in winter and stifling hot in summer—is little better than storage space.

By applying insulation in the roof, attic rooms can be made as comfortable as any part of the house. This means a lot to the woman who wants an extra bedroom, a guest room, or a play-room for the children.

**Balsam-Wool is the  
Ideal Material for  
Roof Insulation**

If you have been thinking of roof insulation as something expensive you will be surprised at the figures your lumber dealer and carpenter will quote. The entire cost of insulating the average roof with Balsam-Wool will be returned in the fuel savings the first few years.

**Not a  
Remodelling Job**

There is no need to shudder at the thought of having the carpenters in to insulate the roof. It is a quick, clean job. The muss and fuss that are so often a part of remodelling do not enter into roof insulation.

## Other Uses For Balsam-Wool

**Garages**      The value of Balsam-Wool as a heat insulator and a sound deadener is by no means limited to houses.

In the garage it lessens the danger of freezing and makes heating easier and much less costly. It makes starting easier. And all automobile manufacturers and mechanics are agreed on the harmful effects of permitting a car to freeze up.

**On the Farm**      The farmer has been quick to see the advantages of insulation in providing better and more healthful quarters for his live stock. Where the farm building is to be either heated or ventilated or both, insulation becomes a necessity. In a barn, poultry house, or a hog house, Balsam-Wool pays for itself in the better health and increased productivity of the stock.

## Fuel Waste A National Burden

The Nation's fuel supply is not inexhaustible. Some day there must be an accounting. Present high prices of fuel are merely an indication of how serious such a problem can grow to be. If a saving of one-fourth to a third can be made in the Nation's annual fuel consumption, the supply will last just that much longer. If heat insulation can perform this miracle then it is a conservation measure of vast importance. That is why we say consider insulation when you build—for your personal profit and for the Nation's good.

BALSAM-WOOL *Is Manufactured by*

*Wood Conversion Company*

*General Office and Factory*

*Cloquet, Minnesota*

CHICAGO OFFICE : *1849 Straus Building*

*You can obtain Balsam-Wool  
from any dealer who sells lumber*



